②

Barclay Curle & Co Ld

No 689 - 690.

Framing Profile "ARMATHIA"

ex

* Amstelbrug

690 Fbd

GLASGOW REPORT No. 65929

690 "Empire Highway"

GLASGOW REPORT No. 66280

Fbd 689 "Empire Courage"

GLASGOW REPORT No. 66523

ex

* 689 Empire Courage (~~Now Named~~ PHILIPS WOUWERMAN)

GLASGOW REPORT No. 66732

3½ × 5½

011877-011883-0036

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Lloyd's Register
Foundation

No 681-2 & 689-90

FRAMING PROFILE

Scale:- 1/4" = one foot.

Plan No 9.A.

FOR AIR HOLES IN FRAMES AND BEAMS SEE MIDSHIP SECTION

FRAMES TO BE PUNCHED FOR SPARRING BUT NO SPARRING FITTED

MINISTRY OF SHIPPING NOTE:- FORE & AFT PEAK BULKHEADS AND BULKHEAD 135 TO HAVE BROAD LINERS (TO TAKE ONE ROW OF RIVETS EACH SIDE OF BULKHEAD FRAME) IN WAY OF OUTSIDE SHELL STRAKES

No 215
DATE 17/2/41

SHELTER DECK.
LOWER DECK.
UPPER DECK.
FO'CLE DECK.
SHELTER Dk KNEES. MARK:- "SK."
UPPER Dk KNEES:- MARK. "UK"
FORECASTLE Dk KNEE. MARK:- F.K.
SEE PLAN OF ENGINEERS STORE
KNEE UNDER TONNAGE BHD 15 MARK U.K. 1.
3×3" O.A. Ex STOCK. CUT FROM TR.95.
KNEE ·42
3" FL.
21"
33"
BEAMS 3½ × 3 × ·34 B'ANGS.
6" To Suit Rolling
44
BEAMS 6 × 3 × ·36 B'ANGS.
BEAMS 7½ × 3 × ·36 B'ANGS
No 5 HATCH.
No 4 HATCH
No 3 HATCH
No 2 HATCH
No 1 HATCH.
BEAMS 8 × 3½ × ·35 B'ANGS.
BEAMS 6 × 3 × ·30 B.A.
BEAMS 7 × 3 × ·31 B'ANGS.
BEAMS 8 × 3½ × 35 B.A.
BEAMS 7" × 3" × ·36 B.A.
BEAMS 6 × 3 × ·32 B.A.
BEAMS 7 × 3 × ·36 B.A.
PUNCH FOR SPARRING STARD
PUNCH FOR SPARRING
PUNCH WING BRACKETS FOR CEILING.
SEE DETAIL OF WING BKTS.
DEEP KNEE SEE PILLARS & GIRDERS.
CHAIN LOCKER
W.T. FLAT
W.T. BULKHEAD
STEM 9" × 2¾"
SEE PLAN OF "FORE END FRAMING"
No 5 HOLD
No 4 HOLD
DEEP TANK
BUNKER SPACE
No 3 HOLD
No 2 HOLD
No 1 HOLD.
No 5 D.B. TANK (OIL FUEL)
No 4 D.B. TANK (OIL FUEL)
No 3 D.B. TANK (OIL FUEL)
No 2 D.B. TANK (OIL FUEL)
No 1. D.B. TANK (OIL FUEL)
125. 130 135. 140 145 150 155 160 W.T.BHD. 165 170
30" FRAME SPACING
29" 28" 27" 26" 25"
24" FRAME SPACING.
TWEEN DECK FRAMES 3" × ·36" O.A. EVERY FR. UP TO SHELT.
7 × 3½ × ·46 O.A.
WING B'KTS FRS. 155-160
G½ × G½ × ·55 FROM STOCK
welding
SEE "FORE END FRAMING"

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Barclay Curle & Co Ld

No 690

"Empire Highway"

Shelter Deck Plating.

(As Built).

690 "Empire Highway".

GLASGOW REPORT No. 66280.

RETAIN

004496.004501-0187

004496-004501-0187

Nº 690.

SHELTER · DECK · PLATING

SCALE 1/4" = 1FOOT.

PLAN Nº B/81

2A12
259.42

NOTE

SPECIAL CARE TO BE TAKEN TO ENSURE FAIR HOLES THROUGH BEAMS WHERE DECK FLANGE IS 3" & RIVETS 7/8" DIA.

NOTES.

BEAMS · TO · BE · JOGGLED.

STRINGER · PLATES · CARRIED · OUT · TO · SHELL · IN · WAY · OF · SCUPPERS.

THIS · PLAN · TO · BE · WORKED · IN · CONJUNCTION · WITH :—

FRAMING · PLAN · FOR · BEAM · KNEES.

HATCHES + GIRDERS · FOR · TRIPPING · BKTS, LUGS. etc.

SMALL PILLARS FOR · RUNNERS + PILLARS TO · BEAMS.

FOR · AIR · HOLES + STAGING HOLES · IN · BEAMS SEE MIDSHIP SECTION

DECK · CAMBER = 14½ ON 28·7½ ½ BREADTH.

HOLES FOR VENTS, DERRICK POSTS, AIR + SOUNDING PIPES etc. TO BE LINED · OFF · AT · SHIP

FOR · DETAIL · OF · "SHAPES" OF · HOUSE FRONTS + ENDS etc SEE SEPARATE · PLAN.

NOTE :— FOR · CHANNEL · RUNNERS · UNDER DECK · WELDED · TO · BEAMS — SEE PLAN OF SMALL · PILLARS · LADDERS etc.

DECK ON "M" INSIDE · STRAKE" OF SHELL.

SECTION THRO' 7' × 12' WINCHES BETWEEN HATCHES 1 & 2. MATERIAL MARK W.C.

(33)

BARCLAY CURLE & Co Ld

No 690.

"EMPIRE HIGHWAY"

2ND DECK PLATING
(AS BUILT).

690 "Empire Highway
GLASGOW REPORT No. 66280.

M/M 'NAPIER STAR'

RETAIN

004496-004501-0185

Lloyds!

004496-004501-0185

Nos 690.

UPPER DECK PLATING.

Scale ¼" = One Foot
Plan No 8.52

Loft. ① 13/8/40
Plater. ② 6/9/40
Manager. ① 6/9/40

2413
25942
NOTE – Spacing of hatch cleats cr. to cr. not to exceed 24", end cleats to be not more than 6" from hatch corners.
Air holes in beams 7" and over
Staging holes in all beams.
See midship section.
PLATING TO BE JOGGLED.
See detail plan of scuppers
NOTES: W.T. trays to be constructed of 12" × ·50" plate welded to deck and tripping Bkts to be arranged on end plates to take thrust of cooler when ship rolls.
Front plate of cooler tray not to be fitted until cooler is shipped in position
All deck openings in cooler room to have 3" radius corners and to have 6" × ·50" flat bar coamings
Seam at C.L. line. Looking forward
CL line of ship
Detail of D.B. butts on beams.
Frames spaced 30" apart
½ L
¾ L
·1 L
Shell chocks 3½" · 3½" · ·40
3" Airpipe & 1¼" sounding pipe P&S
4" Airpipe & 1¼" sounding pipe P&S
2" × ·30" flat bar
Frames change.
STRINGER PLATE WELDED TO SHELL & FRS. P&S. DECK FORMS W.T. FLAT.
Water ballast or cargo oil tank below
Stringer plate welded to shell & frames.
Oil fuel bunker below
Stringer welded to shell & frames.
7" dia. oil filling pipe P.S.
W.T. Bhd
NOTES: W.T. trays to be constructed of 12" × ·50" plate welded to deck and tripping Bkts to be arranged on end plates to take thrust of cooler when ship rolls.
Front plate of tray not to be fitted until cooler is shipped in position
All deck openings in cooler rooms to have 3" radius corners and to have 6" × ·50" flat bar coamings
No holes to be cut for pipes. Meantime these to be lined up at the ship.
4" Airpipes P&S
No 5 HATCH
No 4 HATCH
ENGINE
CASING
No 3 HATCH
No 2 HATCH
No 1 HATCH

RETAIN

NAPIER STAR

Barclay Curle & Co Ld

No 690

ex

"EMPIRE HIGHWAY"

Midship Section

(as built).

GLASGOW REPORT No. 66280

004496-004501-0186

LLOYD'S

Nº690 "EMPIRE HIGHWAY"

326

241
25 9 42

M.S. Nos ~~689-90~~.

MIDSHIP · SECTION

SCALE ½" = ONE FT.

MLD. DIMS. 410'-0" × 57'-3" × 38'-0" TO SHELTER DK.

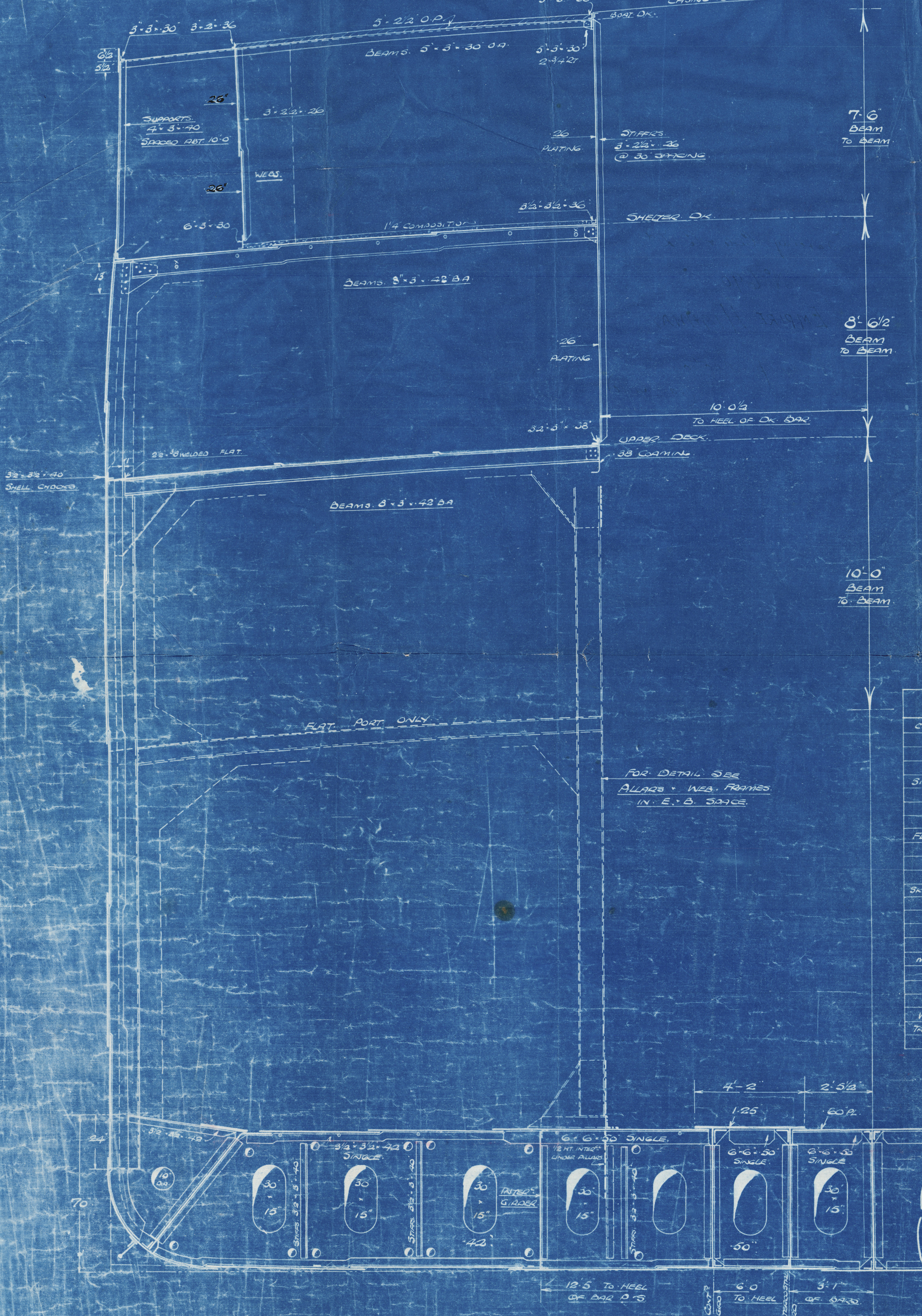
- PLAN Nº 23/A.

TO CLASS 100 A1 LLOYDS WITH FREEBOARD CORRESPONDING TO A DRAFT 18" IN EXCESS OF THAT OF A COMPLETE SUPERSTRUCTURE VESSEL WITH TONNAGE OPENING.

SECTIONS · ARE · 1924 · BRITISH · STANDARD.

EQUIPMENT AS PER RULE SUBJECT TO AGREED REDUCTION IN LENGTH OF CABLE & OMISSION OF 3RD BOWER ANCHOR AS A WAR EMERGENCY MEASURE.

Lot C
2/7/40 @ 6/10/40
D.O. copies (3) 21/4/41
Manager (1) 21/4/41
Plater (1) 24/4/41
Loft (1) 19/ 41



SECTION THRO MACHINERY SPACE

RIVETING.

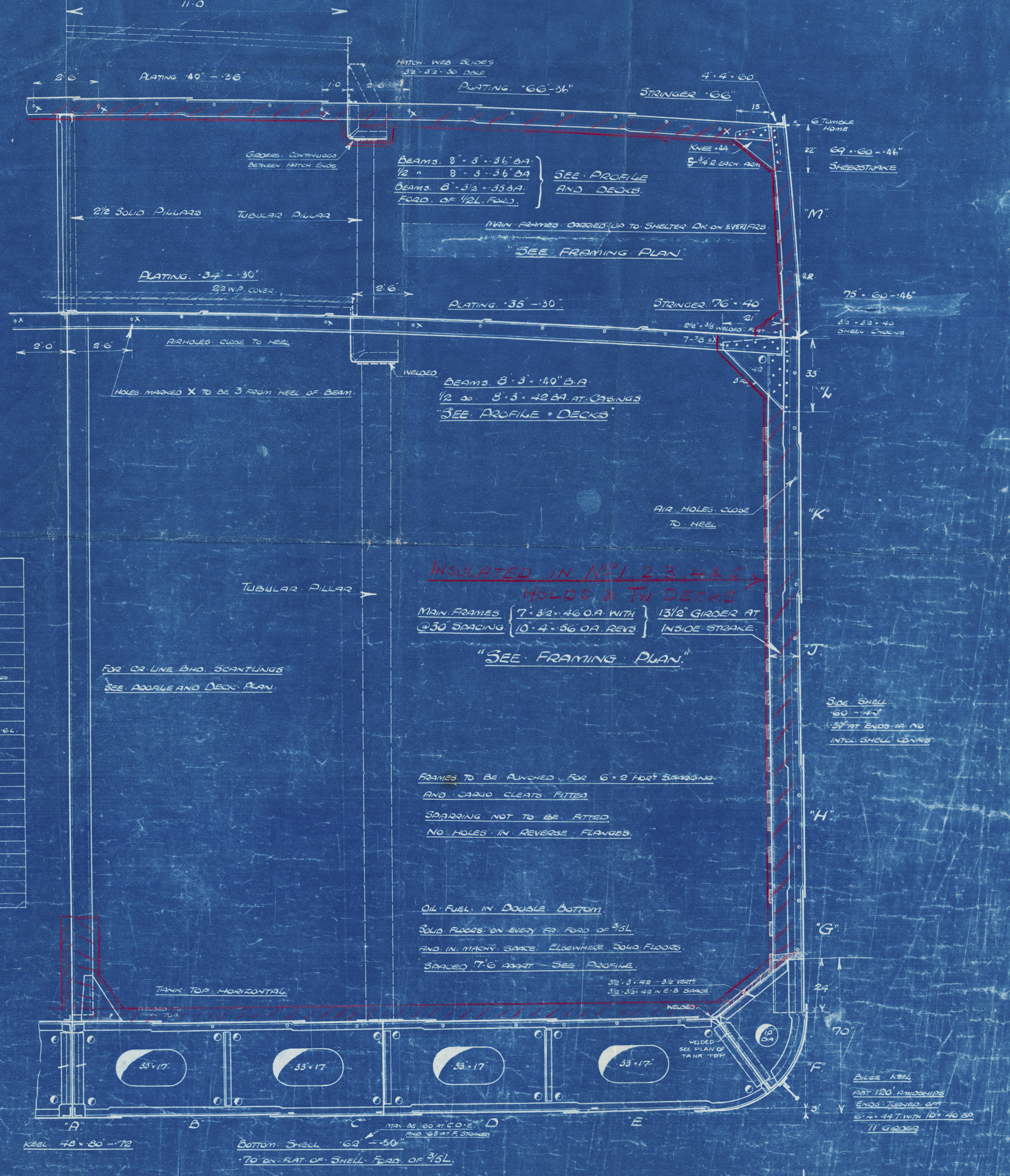
ITEM.	END · LAPS.		EDGE · LAPS.	
	½L.	ENDS.	½L.	ENDS.
KEEL.	4R.	3R.	2R.	2R.
SHELL BOTTOM.	4R. FOR ½L.		2R	2R.
" SIDE.	3R "		2R.	2R.
SHEERSTRAKE & STR. UNDER	4R.		2R.	2R.
CENTRE GIRDER	3R	} SEE DETAILED PLAN		
MARGIN	3R.			
TANK TOP. CR. STRAKE	3R.		2R. 2R. O.F.	1R. AFT. 2R. O.F.
" " PLATING.	2R.	2R	1R. 2R. OIL FUEL.	1R. 2R. O.F.
U.D. STRINGER.	2R.	1R.	1R.	1R.
" PLATING.	2R.	1R.	1R.	1R.
S.D. STRINGER	4R.	2R.	1R.	1R.
" PLATING.	4R.	2R.	1R.	1R.

CAMBER 14½ ON 57'3".

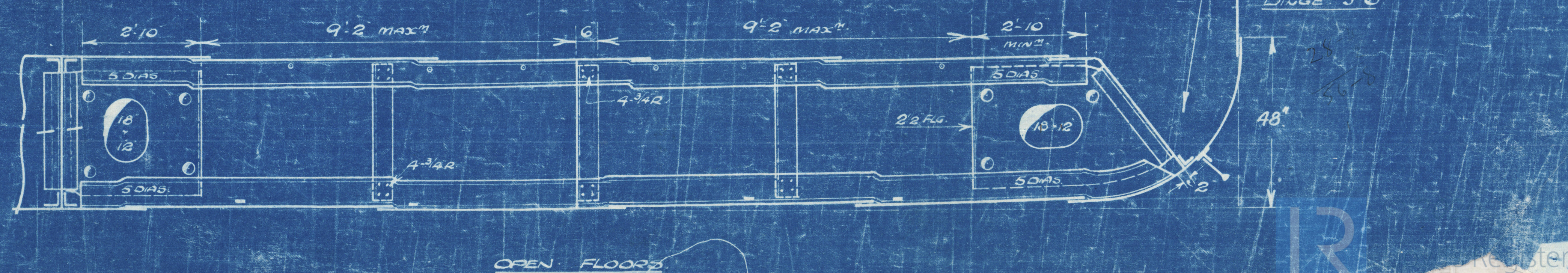
DOUBLE · BOTTOM.

ITEM.	½ LENGTH.		AT · ENDS.		REMARKS
	RULE.	AS FITTED	RULE.	AS FITTED	
CR. GIRDER.	43½ × ·54	43½ × ·54	·46		·50 IN ENG. SPACE × 59⅜ DEEP.
" " BTM. ANG.	4 × 4 × ·54 DBL.	4 × 4 × ·54 DBL.	4 × 4 × ·48 DBL. FORD. 4 × 4 × ·52 DBL. AFT D.B. TANK.		
" " TOP "	3½ × 3½ × ·48 DBL.	3½ × 3½ × ·48 DBL.	3½ × 3½ × ·44 DBL. FRD. 3½ × 3½ × ·50 DBL. AFT D.B. TANK		4 × 4 IN WAY OF 1" RIVS.
" " VERT. "	3 × 3 × ·42 SIN.	5 × 3½ × ·42 SING.	3 × 3 × ·42 SING.	5 × 3½ × ·42 SING.	3½ × 3½ × ·42 DBLE. IN E.R.
SIDE. GIRDERS.	·36, ·42 E.R.	·36 ·42 - ·50 IN E.R.			
" " BTM. ANG.	3½ × 3½ × ·42 E.R. ·42	3½ × 3½ × ·42	3½ × 3½ × ·48 FR. ⅗L. 3½ × 3½ × ·42 AFT.	3½ × 3½ × ·42	3½ × 3½ × ·42 — ·50 IN E.R.
" " TOP "	3 × 3 × ·42 E.R. ·42	3 × 3 × ·42	3 × 3 × ·42	3 × 3 × ·42	6 × 6 × ·50 IN WAY OF ENGINES. 3½ × 3½ × ·42 CLEAR OF ENGS.
" " VERT. "	3" × 3" × ·36 D°	5 × 3 × ·36	3" × 3" × ·36	5 × 3 × ·36	3½ × 3½ × ·42 — ·50 DBLE. IN E.R.
FLOORS.	·36, ·42 E.R.	·36 ·42 IN E.R.			W.T. FLOORS. ·48
" FRAMES.	3½ × 3½ × ·42	3½ × 3½ × ·42	6 × 6 × ·48 FORD. ½L 3½ × 3½ × ·42 AFT.	3½ × 3½ × ·48 DBL. ½L. 3½ × 3½ × ·42 AFT	3½ × 3½ × ·56 AT W.T. FLOORS.
" REV. FRS.	3 × 3 × ·42 3½ × 3½ × ·42 IN E.R.	3 × 3 × ·42 3½ × 3½ × ·42 IN E.R.			6 × 6 × ·50 UNDER ENGINES. BACK BARS AT CR. LINE FORD ·6L.
" STIFFENERS.	3 × 3 × ·36	3 × 3 × ·36 3½ × 3 × ·40 E.R.			ON WIDE SPACED FLOORS BETWEEN MANHOLES. AND ON EVERY FLOOR FORD. OF FORD. ⅗L.
SKELETON FLOORS.	·36	·36			
" " FRS.	8 × 3½ × ·33 BA	8 × 3½ × ·36 B.A.			
" " REV. FRS.	8 × 3 × ·33 BA.	8 × 3 × ·36 BA.			
" " STRUTS.	6 × 3½ × ·40 A.	6 × 3½ × ·40 A.			
" " SIDE GIRD. ANGLE.	6 × 3 × ·40 A.	6 × 3 × ·40 A.			
MARGIN.	38¼ × ·53	AFT. 58 FRD. 84 × ·53			
" SHELL. BAR.	4 × 4 × ·53	4 × 4 × ·53			
" VERT & OUTSIDE.	3½ × 3½ × ·42	3½ × 3½ × ·42			
" " INSIDE.	3½ × 3 × ·42, ·42 ER.	3½ × 3½ × ·42, ·42 ER.			
WING. BKTS.	·45	·45			
TANK. TOP. CR. STRAKE.	·48 × ·52	·54	·44		
" " PLATING.	·43, ·52 E.R.	·43 ·52 E.R.			·51 UNDER HATCHES IN LIEU OF CEILING.

RIVETING - LIST.	SPACING.
FRAMES TO SHELL IN DEEP TANKS, AFTER PEAK TANK AND FROM KEEL TO WELL ABOVE L.W.L. FOR ·16L. FROM STEM.	5½ DIAS.
FRAMES TO SHELL ELSEWHERE.	7 DIAS.
FRAMES TO FLOORS IN PEAKS AND DEEP TANKS.	6 "
" " " ON FLAT OF FLOOR FORD. AND UP TO L.W.L. FOR ·16L FROM STEM.	6 "
FRAMES TO FLOORS ELSEWHERE.	7 "
REVERSE FRAMES TO TANK TOP UNDER ENGINE SEATING.	4½ "
" " " " " AT CENTRE STRAKE FORD. ·5L.	4 "
" " " " " ON FLAT OF FLOOR FORWARD.	6 "
" " " " " ELSEWHERE.	7 "
" " " FLOORS UNDER ENGINE SEATING.	5½ "
" " " " ON FLAT OF FLOOR FORD.	6 "
" " " " ELSEWHERE.	7 "
CENTRE GIRDER BOTTOM ANGLES TO SHELL.	5½ "
" " VERTICAL FLANGE	5½ "
" " " " "	"
" " TOP ANGLES BOTH FLANGES UNDER ENGINES EACH ROW.	5½ "
" " " " " " FORD. OF ·5L AMIDSHIPS.	6 "
" " " " " " OF EACH ROW ELSEWHERE.	7 "
" " VERTL. CONNN. TO FLOORS BOTH FLANGES.	5 "
SIDE GIRDERS. BOTTOM ANGLES ON FLAT OF FLOOR FORD. BOTH FLANGES.	5½ "
" " " " ELSEWHERE.	6 "
" " TOP " UNDER ENGINE SEATING.	4½ "
" " " " ON FLAT OF FLOOR FORD.	5½ "
" " " " ELSEWHERE.	6 "
" " VERTICAL " ON FLAT OF FLOOR FORD. BOTH FLANGES.	5 "
" " " " ELSEWHERE.	7 "
MARGIN SHELL ANGLES - BOTH FLANGES.	5 "
" VERTICALS TO FLOORS AND WING BRACKETS.	5 "
BEAMS ON CROWN OF PEAK AND DEEP TANKS.	6 "
" ELSEWHERE.	7 "


11'0"
2'6
PLATING ·40" - ·36"
1'0
2'6
HATCH WEB SLIDES 3½·3½·50 DBLE
PLATING ·66"-·36"
4·4·60
STRINGER ·66"
15
6" TUMBLE HOME
GIRDERS CONTINUOUS BETWEEN HATCH ENDS
BEAMS. 8"·3·36 BA.
½ " 8·3·36 BA
BEAMS. 8·3½·35 BA.
FORD. OF ½L. FORD.
SEE PROFILE AND DECKS.
KNEE ·44
5·¾R. EACH ARM
22"
69·60-·46"
SHEERSTRAKE
2½ SOLID PILLARS
TUBULAR PILLAR
"M"
MAIN FRAMES CARRIED UP TO SHELTER DK. ON EVERY 4 FRS.
"SEE FRAMING PLAN"
PLATING ·34 - ·30"
2½ W.P. COVER
2'6
2R.
PLATING ·35" - ·30"
STRINGER ·76"·40
75·60-·46"
21
2½·⅜ WELDED FLAT
3½·3½·40 SHELL CHOCKS
7-7/8
2'0
2'6
AIRHOLES CLOSE TO HEEL
WELDED
HOLES MARKED X TO BE 3" FROM HEEL OF BEAM.
BEAMS 8·3·40" B.A.
½ DO 8·3·42 BA. AT CASINGS
"SEE PROFILE & DECKS"
·42
3½R
33
"L"
AIR HOLES CLOSE TO HEEL
"K"
TUBULAR PILLAR
INSULATED IN Nº 1, 2, 3, 4 & 5 HOLDS & TW DECKS
MAIN FRAMES @30" SPACING
7·3½·46 O.A. WITH
10·4·56 O.A. REVS.
13½" GIRDER AT INSIDE STRAKE.
"J"
"SEE FRAMING PLAN."
FOR CR. LINE BHD. SCANTLINGS SEE PROFILE AND DECK PLAN.
SIDE SHELL ·60 - ·45"
·57" AT ENDS IF NO INTCL. SHELL CONNS
FRAMES TO BE PUNCHED FOR 6"×2 HORL SPARRING AND CARGO CLEATS FITTED.
SPARRING NOT TO BE FITTED
NO HOLES IN REVERSE FLANGES.
"H"
OIL FUEL IN DOUBLE BOTTOM.
SOLID FLOORS ON EVERY FR. FORD OF ⅗L.
AND IN MACHY SPACE. ELSEWHERE SOLID FLOORS.
SPACED 7'6" APART - SEE PROFILE.
"G"
TANK TOP HORIZONTAL.
WELDED TO TANK TOP
3½·3·42 - 3½" VERT.
3½·3½·42 IN E.B. SPACE.
WELDED
24
70"
10" DIA
WELDED SEE PLAN OF TANK TOP.
33"×17"
"F"
3"
"A"
"B"
"C"
"D"
"E"
KEEL 48×80"-·72
MAY BE ·60 AT C.D.E. AND ·65 AT F. STRAKES
BOTTOM SHELL ·62" - ·50"
·70 ON FLAT OF SHELL FORD OF ⅗L.
BILGE KEEL ABT 120' AMIDSHIPS ENDS TURNED OFF
6·4·44 T. WITH 10·40 BP. 11 GIRDER

RULE BOTTOM STIFFENING ON FLAT OF BOTTOM FORWARD TO BE CONSIDERED



OPEN FLOORS

Lloyd's Register Foundation
00-4496-004501-0188

R.M.C.

Barclay Curle & Co Ld

No 690

Typical section & Details of Insulation.

M/V. NAPIER STAR EX "EMPIRE HIGHWAY".

GLASGOW REPORT No. 66266

RECORDS DEPT.
LONDON.

4

0044496-004501-0189

Lloyds

757
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SURVEYOR'S COPY

Nº 690
TYPICAL SECTION & DETAILS OF INSULATION
SCALES · 1/2 & 1" = 1 FOOT.
PLAN Nº E65.

876

ADMIRALTY 12-3-42
LLOYDS 27-2-42 (3) 9-4-42 (1)
PLATER 25-4-42
J&E HALL 1-5-42 · 13-3-42
DONALD-BEAN " 11-3-42
SPIERS "
MANAGER 11-5-42
CARPENTER
PLUMBER
B/SMITH
PLUMBER 20-5-42
MANAGER 26-5-42
PLATER 27-5-42
DONALD-BEAN 8-6-42
" " 15-6-42
" " 14-7-42
LLOYDS ② 14-7-42

D.T.

ALTERNATE LUGS ON OPPOSITE SIDES OF GROUND
11" MIN. STILLITE
2"×2" LUG WELDED TO BEAM
8" BEAMS
SHELTER DECK
3"×2" W.P. GROUNDS, SPACED TO SUIT WIDTH OF BOARDS
INSULATION ON GIRDER, 1½" MINIMUM.
LUGS TO STOP AT LEAST ¼" SHORT OF INSULATION LINING
3/16" HARDBOARD LINING WITH 3/8 OR 1/2 "INSULWOOD"
3"×2" GROUNDS
STILLITE INSULATION 1½" BEYOND BEAM KNEE
4"×2" WOOD GROUNDS ON ALTERNATE KNEES
BEAM KNEES TO BE LINED WITH WOOD OR COMPOSITE BOARD IF SUITABLE WIDTH OF MATERIAL IS OBTAINABLE.
D.G. CABLES ARRANGED TO SUIT R.D.S.C. DEPT REQUIREMENTS. POSITION TO LLOYDS SURVEYOR'S SATISFACTION.
CONTINUOUS AIR TRUNK 1" T.&G. WHITE PINE BOARDING
5"×2" GROUNDS ON ALTERNATE FRAMES
1" T.&G. LINING [3/16" HARDBOARD IN WAY OF AIR TRUNK.]
TWEEN DK. INSULATION TO EXTEND 2" BEYOND TOE OF FRAME
8'-6½"
PILLARS INSULATED BY ¾" HAIR FELT & 2" SISAL ROPE
STILLITE
1" T.&G. BOARDING
2" FLAT BAR WELDED TO DK
UPPER DECK
12" CEMENT CHOCK.
5"×2" GROUND.
1½" INSULATION ON FLANGE OF BEAM KNEE
2 LAYERS OF ¾" T.&G. LINING.
VERTICAL CARGO BATTENS TO BE FITTED ON BULKHEADS 15" APART (CRS.) AND TO SUIT STIFFENERS
NON-INSULATED SIDE OF BHDs ALSO TO HAVE CARGO BATTENS FITTED.
1" T.&G. LINING BOARDS TO BE AS NARROW AS CAN BE PROCURED
SHIPS SIDE INSULATION TO EXTEND 2" BEYOND HEEL OF REV. FRAME.
2"×3" W.P. GROUNDS ON REVERSE FRAMES (GROUNDS FITTED ON ALTERNATE REV. FRAMES)
C.L. BULKHEAD
INSULATION ON PILLARS ¾ HAIR FELT & 2" SISAL ROPE.
RIBBAND INSULATION ON ℄ BHD ½" BEYOND TOE OF STIFFR
3"×2" GROUNDS SPACED 4'-0" APART. 4" STILLITE BETWEEN
4'0"
1" T.&G. LINING
SUCTION TRUNK
4" DUNNAGE BATTENS
TANK TOP GROUNDS ARRANGED TO SUIT SUCTION TRUNKS.
GROUNDS BELOW TRUNK ANGLES TO BE 3" THICK.
TANK TOP & BILGES TO BE GIVEN 2 COATS "DURIP" & 1 COAT DURAPROOF COMPOSITIONS TO BE NON-ODOROUS & NOT LESS THAN ½ TOTAL THICKNESS
TAPERED INSULATED PLUGS TO BE FITTED IN WAY OF ALL TANK TOP MANHOLES, GENERALLY SIMILAR TO BILGE PLUGS. O.T. COAMINGS TO BE FITTED ROUND MANHOLES.
6" CORK
1" T.&G. BOARDING
1¼ T.&G. BOARDING
BOTH LAYERS OF CLEADING TO BE ARRANGED ATHWARTSHIPS 14.7.42
3" LIQUID SEALED NON-RETURN BILGE TRAP
6"×2" GROUNDS RUNNING FORE & AFT 18" APART
SQUARE PORTABLE PLUGS TO BE FITTED IN WAY OF HOLD SCUPPERS
18"
CLACK VALVE
BEND
STEEL PLATE FROM PLUGS TO SHIPS SIDE
COLLARS WELDED ROUND FRAMES TO ENSURE GAS-TIGHTNESS.
CONTINUOUS OPENING
LIMBER PLUGS 2 FR. SPACES LONG FITTED CONTINUOUSLY.
CONTINUOUS GUSSET PLATE.
"DURIP" (2 COATS) IS CARRIED ALL OVER TANK TOP, OVER MARGIN PLATE AND CONNECTING FLANGES OF ALL ANGLES, OVER MARGIN SHELL ANGLE TO TOE OF MAIN FRAME; THUS PROVIDING A COMPLETE ENVELOPE OVER EXPOSED SURFACES OF O.F. TANK.
FLAT BAR LUGS TO BE WELDED IN POSITIONS LINED UP BY SUB-CONTRACTORS.
ALL AIR & SOUNDING PIPES TO BE THOROUGHLY TESTED BEFORE INSULATION IS FITTED. THE NUMBER OF PIPE JOINTS TO BE REDUCED TO AN ABSOLUTE MINIMUM. COUPLINGS TO BE FITTED IF FLANGES DO NOT ALLOW SUFFICIENT THICKNESS OF INSULATION.
HATCH END COAMING
INSULATED PLUGS FITTED AT C.L. IN WAY OF HOLD LADDERS
SHELTER DK.
STEEL DECK
11" STILLITE
3/8 OR 1/2 INSULWOOD
3/16 "HARDBOARD"
4'-9"
2 RINGS IN EACH PLUG
1¼" T.&G.
6" STILLITE
STEEL PROTECTION PLATE
4 PLUGS IN LENGTH OF 18'-0"
3½×3½×.50
13½×.50 PLATE
JOINTS OF WEB BAULKS TO BE STAGGERED.
PORTABLE GIRDER.
¾ BOLTS SPACED ABT 12" REELED.
1/8 STEEL LINING ON FACE OF WOOD
FORE & AFT ELEVATION IN WAY OF HATCH · SCALE · 1" = 1 FOOT.
ORDINARY HATCH COVERS
SLIDING HATCH BEAMS
HATCH SIDE COAMING.
.50 DOUBLING
PORTABLE GIRDER BETWEEN ROWS OF PLUGS.
3½ × 3½ × .50 ANGLES
13½ × .50 PLATE
KEY PLUG.
1¼ T.&G.
6" STILLITE.
PORTABLE GIRDER.
SECTION SHEWING ATHWARTSHIP ARRANGT OF HATCH PLUGS SCALE · 1" = 1 FOOT
PLUG TO HAVE 1 RING BOLT
TOP LINING 1¼" T.&G.
INNER LINING 1" T.&G.
4" SLAB CORK.
6" SLAB CORK
TANK TOP.
18"×12" O.T. MANHOLE
1/8 STEEL PLATE.
4"×3/8 FLAT BAR WELDED TO T.T. FORMING O.T. COAMING.
SECTION IN WAY OF MANHOLE PLUG.
3"×3"×2" DISTANCE PIECES SPACED 3'0" APART FIXED TO T.&G. RETAINING BOARDS BUT NOT TO REVERSE FRAME.
SHELL PLATING
4" AIR PIPE
LAYER OF FELT BETWEEN GROUND & FLANGE OF REVERSE BAR.
15½" STILLITE.
13½" FRAME GIRDER
INSULATION TO EXTEND 2" BEYOND REV. FR.
RETAINING BOARDS 1" T.&G.
SPACED 15" CRS. & FITTED VERTICALLY.
BOLTS 4'0" APART.
SECTION AT SHIPS SIDE IN HOLD.
BOLT HEADS TO BE SUNK BELOW FACE OF GROUND & PLUGGED. 1" T.&G. TO BE NAILED TO GROUNDS. DUNNAGE BATTENS TO BE NAILED TO T.&G. BOARDS. CARE TO BE TAKEN THAT NAILS DO NOT MAKE CONTACT WITH BOLTS OR REVERSE FRAME.
LUGS ON ALTERNATE BEAMS TO BE ON OPPOSITE SIDES OF GROUND
SHELTER DECK
8" B.A. BEAMS. DISTANCE PIECES ON ALTERNATE BEAMS.
11" STILLITE
LUGS TO STOP AT LEAST ¼" SHORT OF INSULATION LINING
3/8 OR ½" "INSULWOOD"
3/16 "HARDBOARD"
2"×2" LUG WELDED TO BEAM.
3"×2" GROUNDS RUNNING F.&A. & SPACED 3'0" APART (OR TO SUIT WIDTH OF BOARDS.)
ELEVATION OF SHELTER DECK INSULATION. SCALE · 1" = 1 FOOT.
STILLITE TO BE CAREFULLY PACKED ON FLANGE OF REV. FRAME BETWEEN BLOCKS
2'-6"
2'-6" FRAME SPACING
3'0"
3"×2" GROUNDS, ALTERNATE FRAMES
3" BLOCKS, 3'0" APART TO BE FITTED IN WAY OF THE INTERMEDIATE FRAMES. BLOCKS TO HAVE NO CONNECTION TO REVERSE BAR BUT TO BE NAILED TO T.&G. SHEATHING.
ELEVATION OF SHIPS SIDE SHEATHING 1" = 1 FOOT.
3×3" ELM BATTENS ON TOP OF TUNNEL SPACED 12" CR. TO CR.
SECURED TO GROUND
¼" STEEL PLATING
5"×2" WOOD GROUNDS SPACED 12" CENTRE TO CENTRE.
6"×3" LUGS WELDED TO TUNNEL
WHITE PINE OR OTHER SUITABLE BATTENS FITTED ON SIDES OF TRUNKS.
SUCTION TRUNK IN Nº 4 HOLD, P.&S.
PLATE STIFFRS 2'-6" LONG AT 5'-0" PITCH
3/8 PLATING
12 W.G. GALVD PLATING
12 W.G. GALVD PLATING.
8" STILLITE
5"×2" GROUNDS
8"×2" GROUND
"DURIP"
TANK TOP
6" CORK
3"×1½" F.&A. RUNNER SCREWED DOWN AT EVERY FRAME
SECTION THRO' TUNNEL SCALE · ½" = 1 FOOT.
12" CHANNEL STIFF.
½ HAIR FELT
4"
12½" STILLITE
ATHWARTSHIP BHD
INSULATION CARRIED 4'0" ABOVE T.T.
C.L. BHD
4" STILLITE
10½" STILLITE.
WELDED TO BHD
1" FINISHED T.&G. BOARDING
10"×3½"×.50 B.A.
5"×2½" SHIFTING BOARD ANGLE
½" HAIR FELT.
LUGS TO TAKE PORTION OF LADDER OUTSIDE INSULATION
15"×4"×4" CHANNEL
SUCTION TRUNK 3/8 PLATING.
PLAN AT C.L. BULKHEAD
INSULATION CARRIED 4'0" ABOVE T.T. & 4'0" FROM BULKHEAD
DUNNAGE BATTENS 4" DEEP (FITTED ABROAD)
CARE MUST BE TAKEN THAT OPENINGS IN SUCTION TRUNKS CAN NOT BE BLOCKED BY CARGO.
℄ BHD.
1" T.&G. LINING
15½ STILLITE
4" STILLITE
1" T.&G.
3/8 PLATE
4" AIR SPACE TO BE ARRANGED BETWEEN SUCTION TRUNKS WHERE CLEAR OF ℄ BULKHEADS
15" CHANNEL
1¾" DIA HOLES AT 1'0" PITCH (1½ IN NO 1 HOLD)
SEMI-CIRCULAR SUCTION TRUNK IN Nos 1, 2 & 3 HOLDS.
SUCTION TRUNK IN Nos 1, 2, 3 HOLDS.
5" MAX.
SUCTION OPENINGS AT 2'0" PITCH
2"×2" ANGLE.
6"×2" GROUNDS
6" SLAB CORK
6"×3" GROUNDS UNDER SUCTION TRUNK ANGLES
3"×1½" RUNNER SCREWED DOWN TO FACING BOARDS AT EVERY FR. SPACE.
3"×1½" RUNNERS FITTED WHERE TRUNK IS CLEAR OF C.L. BULKHEAD
SECTION IN WAY OF 15" CHANNEL ON ℄ BULKHEAD SCALE · 1" = 1 FOOT.
SUCTION TRUNK RUNS AFT TO TUNNEL ESCAPE BULKHD
¼ STEEL PLATING
SUCTION TRUNK RUNS AFT TO BULKHD 12.
1" & 1½ T.&G. BOARDING
6" SLAB CORK ON TOP OF TUNNEL RECESS
FOR SUCTION TRUNK SEE SEPARATE PLAN
3'3"
9"
1 3/8 STEEL PLATING
8" INSULATION
12 W.G. GALVD STEEL PLATING
4'2"
7"
12" DEEP TRUNK ON FORD SIDE OF BHD 20. [3/8 PLATING]
HEEL OF REVERSE FR. AT 21
SHELL AT FR 21
SECTN AT 21
SECTION AT FR. 20. LOOKING AFT SCALE - ½" = 1 FOOT
1" T.&G. WOOD BOARDING
15½ STILLITE
13" DIA PILLAR
¾ HAIR FELT & 2" SISAL ROPE
EXAMINATION PLUGS TO BE FITTED AT FOOT OF PILLARS.
STILLITE
INSULATED PLUG
1½ & 1" WOOD SHEATHING
6" CORK
"DURIP"
FLAT BAR LUGS TO BE WELDED
SECTION IN WAY OF PILLAR - FR. 33. SCALE - ½" = 1 FOOT.
STILLITE
1" & 1¼" T.&G. SHEATHING
12½" DIA. PILLAR.
¾ HAIR FELT & 2" SISAL ROPE.
PLUG
1" & 1¼" WOOD SHEATHING.
6" CORK.
SECTION IN WAY OF PILLAR FR. 44 SCALE ½" = 1 FOOT.
SECTION AT 12
SECTION AT 20
TUNNEL ESCAPE AT 12-13.
8" INSULATION
SECTION AT FR 26
SUCTION TRUNKS
INSULATION
SECTN AT 20
SECTIONS IN Nº 5 HOLD SCALE · ¼" = 1 FOOT.
1/16 LEATHER WASHER
3¾ DIAR
SLOT 5/16 DEEP
2½
2¼
3/8
¼" DIA. HOLE
2½ BORE
7½ GALVD W.I. PIPE.
HOLD THERMO TUBE TO BE INSULATED IN TWEEN DECK.
6"
TEAK WOOD BLOCK 15¼ × 9½ × 2½
LETTERS CAST IN 1/16 DEEP IN NAMEPLATE.
9¼
6¼
4 - 1½ BRASS WOOD SCREWS.
POSITION OF THERMOMETER TUBES TO BE DETERMINED AT SHIP IN CONJUNCTION WITH J. & E. HALLS REPRESENTATIVE
DETAIL OF DOUBLE THERMOMETER DECKPLATE. SCALE - 3" = 1 FOOT.
SHELTER DECK
6"
COUPLING.
PORTABLE PERFORATED TUBE ¾ DIA. HOLES 3" PITCH 4 ROWS
HOLD TUBE INSULATED IN TWEEN DECK. ¾ HAIR FELT & 2" SISAL ROPE
¾ HAIR FELT & 2" SISAL ROPE
'A' 'A'
PERFORATED THERMO TUBE
SECTION AT 'A' 'A'.
UPPER DECK
SHOE
1¾ × 1⅛
THERMO TUBE
WOOD CASING
WOOD CASING TO BE OF STRONG CONSTRUCTION SUITABLY SUPPORTED & EFFICIENTLY CLAMPED IN WAY OF JOINS
MESSRS DONALD-BEAN TO ERECT ONE CASING FOR OWNERS APPROVAL BEFORE CONSTRUCTING REMAINDER.
OPENINGS 9"×1⅛
TANK TOP.
DETAIL OF THERMO TUBES SCALE · ½ = 1 FOOT.
WOOD EXTENSION IN HOLD SCALE - 3" = 1 FOOT.
.40" COVER PLATE
HINGES TO BE SO ARRANGED SO THAT WHEN HATCH IS CLOSED THE RUBBER IS COMPRESSED
TYPICAL DETAIL OF ACCESS HATCH COVER. SCALE: 1½" = ONE FOOT.
CLIP FOR SECURING COVER WHEN OPEN ATTACHED TO BAR AT Nº 2 ATTACHED TO BULKD AT Nº 1, 4 & 5
BUTTERFLY NUTS MADE FROM 3"×1" FLAT BAR
5" 5"
1⅛ DIA FORGED STEEL BOLT
SPLIT PIN
1"
3"
WASHER
.40" COAMING
5"
1¼
7/8" DIA STEEL BOLT
4"
STAMPING (BY BLACKSMITH) WELDED TO COAMING.
DETAIL OF TOGGLE SCALE: HALF SIZE.
2'-9" FROM COAMING
MAST HOUSE BHD
6"
DETAIL IN WAY OF HINGE - Nº5 HATCH
HINGED STEEL WATERTIGHT COVER.
BAR ON Nº2 COAMING
AT Nº 5
MAST HOUSE BULKDS AT Nos 1 & 4
2'-6" COAMING
.40" COAMING
2'-6" × 2'-6"
COAMING AT Nos 1, 2, 4 & 5 HATCHES Nº 3 HATCH IN MIDSHIP HOUSE
COAMING AT Nº 2 .40" THICK.
WEDGE FASTENER
HINGES
¾ DIA. RUBBER GASKET FIXED TO PLUG.
3" FLAT BAR
3"×2½" WOOD CANTS [REMOVABLE]
SHELTER DECK.
SUMP ROUND PLUG COAMING
3"×2" CANT (REMOVABLE)
STEEL PLATE
4" INSULATION
1'-8½ × 1'-9"
2'-0" × 2'-0" OPENING IN STEEL DECK
11" INSULATION
DETAIL OF ACCESS HATCH TO FAN & COOLERS. SCALE - 3" = 1 FOOT.
MATERIAL ORDER A.H.C.

SPACE	R.
Nº 1 HOLD	1'-11"
Nº 2 "	2'-3½"
Nº 3 "	1'-10"

SINGLE DECKPLATE		DOUBLE DECKPLATE		
Nº OFF	ENGRAVING	Nº OFF	ENGRAVING	ENGRAVING
2	Nº 1 COOLER "D"	4	Nº 1 HOLD	Nº 1 TWN DK.
2	Nº 2 " "D"	4	Nº 2 "	Nº 2 " "
2	Nº 3 " "D"	4	Nº 3 "	Nº 3 " "
2	Nº 4 " "D"	4	Nº 4 "	Nº 4 " "
2	Nº 5 " "D"	4	Nº 5 "	Nº 5 " "
1	Nº 1 COOLER "S"			
1	Nº 2 " "S"			
1	Nº 3 " "S"			
1	Nº 4 " "S"			
1	Nº 5 " "S"			

NOTE:- DECKPLATES "D" TO BE FITTED AT DELIVERY OR OUTBOARD END OF COOLER ROOM, DECKPLATES "S" TO BE FITTED NEAR FAN.

The remaining requirements of the Rules for Refrigerating Machinery & Appliances to be complied with so far as they are applicable.

APPROVED
LLOYD'S REGISTER OF SHIPPING
J.R. Beveridge
DATE 23/7/42

004476-004501-0189

R.M.C.

NAPIER STAR

outline of insulated spaces

RECORDS DEPT.,
LONDON.

7

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GEN BOX NO 373A

BARCLAY, CURLE & CO. LTD.
No 3661
DATE 28/2/42
WHITEINCH, GLASGOW

Nº 690

OUTLINE OF INSULATED SPACES

PLAN NO. E/64.
SCALE - 1/8" = 1 FOOT.

"EMPIRE HIGHWAY"

Reqmts of Sect. 3, Cl. 5 to be complied with if applicable.

THE TANK TOP INSULATION TO BE FORMED BY 6"×3" GROUNDS, RUNNING FORE & AFT SPACED 18" APART, THE INTERVENING SPACE BEING FILLED WITH SLAB CORK. ON TOP OF GROUNDS, 2 LAYERS OF T. & G. BOARDING, 1" & 1¼", TO BE FITTED. TANK TOP & BILGES TO BE MADE ABSOLUTELY GAS-TIGHT, THE WHOLE TO BE COATED WITH "DURIP" OR OTHER SUITABLE COMPOSITION

SHIPS SIDE & BULKHEAD INSULATION TO BE OF "STILLITE" & TO BE RETAINED IN POSITION BY 1" (FINISHED) T. & G. BOARDING. 2"×2" CARGO BATTENS TO BE FITTED VERTICALLY IN HOLD. INSULATION ON SHIPS SIDE TO BE FITTED 2" BEYOND REV. FRAME, 1½" BEYOND BULB ANGLES, AND 1" BEYOND TOE OF ORDINARY ANGLES.
DECKHEAD LINING TO BE A COMPOSITE BOARD OF 3/16" "HARDBOARD" AND 3/8" OR 1/2" "INSULWOOD".

PILLARS & THERMOMETER TUBES TO BE INSULATED BY ¾" HAIR FELT & 2" SISAL ROPE.

DRAINAGE :- PROVISION TO BE MADE FOR DRAINING THE INSIDE OF ALL INSULATED COMPARTMENTS
DRAINS FROM LOWER HOLDS TO BILGES TO BE FITTED WITH LIQUID-SEALED NON-RETURN BILGE TRAPS.
TWEEN DK SPACES, INCLUDING COOLER TRAYS, TO BE SCUPPERED - ALL FITTED WITH LIQUID SEALED TRAPS.
FIRE EXTINGUISHING & OTHER PIPES TO BE WELL INSULATED TO PREVENT FORMATION OF ICE INSIDE PIPES.

The remaining requirements of the Rules for Refrigerating Machinery & Appliances to be complied with so far as they are applicable.

APPROVED
LLOYD'S REGISTER OF SHIPPING
J. R. Beveridge
DATE 7/3/42

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27 FEB 1941

Nos 681-2 & 689-90 PLAN No 2.D.
RUDDER & STERNFRAME.
SCALES:- 1/2" & 1 1/2" = 1'-0".

BARCLAY, CURLE & CO. LTD.
No 452
DATE 21-2-41
WHITEINCH, GLASGOW

TO B.S. * TESTS.
SCANTLINGS ON PLAN MUST BE ADHERED TO AS PAYMENT WILL BE ON WEIGHT CALCULATED THEREFROM.

AREA OF RUDDER ABAFT ℄ OF PINTLES.	151 SQ. FT.
C.G. OF " " " " "	4 FT.-6 INS.
LENGTH OF SHIP.	410 FT.-0 INS.
DRAFT " "	25 FT.-10 5/8 INS.
SPEED " "	12 1/2 KNOTS.

SCANTLINGS INCREASED OVER RULE IN ACCORDANCE WITH MINISTRY OF SHIPPING EMERGENCY REQUIREMENTS AS FOLLOWS:- RUDDER STOCK, 10% OVER RULE; TRANSOM POST, 15% OVER RULE;

STERNFRAME OF CAST STEEL WITH GUDGEONS CAST ON. PATTERNS TO BE INSPECTED BY SHIPBUILDERS REPRESENTATIVE BEFORE WORK IS COMMENCED. FULL SIZE SECTIONS WILL BE SUPPLIED AND SHOULD BE WORKED TO IN PREFERENCE TO FIGURES ON THIS PLAN. ALL APPROXIMATE FIGURES TO BE VERIFIED BEFORE WORK IS COMMENCED. ALL RIVET HOLES TO BE DRILLED BY MAKERS AT THEIR WORKS TO INFORMATION ON THIS PLAN. CENTRE LINE OF SHIP TO BE CUT AT BOTTOM & BACK OF CASTING & AT POINTS OF ALL WEBS. LINE OF CENTRE OF SHIP TO BE CUT IN ALONG BOTTOM & BACK OF STERNFRAME AND AT POINTS OF ALL WEBS BY MAKERS AT THEIR WORKS.

RUDDER FRAME OF CAST STEEL WITH PINTLE BOSSES CAST ON. FOR EXACT POSITION OF RUDDER ARMS A BATTEN WILL BE SUPPLIED BY SHIPBUILDERS, GIVING EXACT POSITIONS OF PINTLE BOSSES, ALSO LENGTHS ETC. OF RUDDER STOCK. ALL RIVET HOLES TO BE DRILLED BY MAKERS AT THEIR WORKS TO INFORMATION ON THIS PLAN

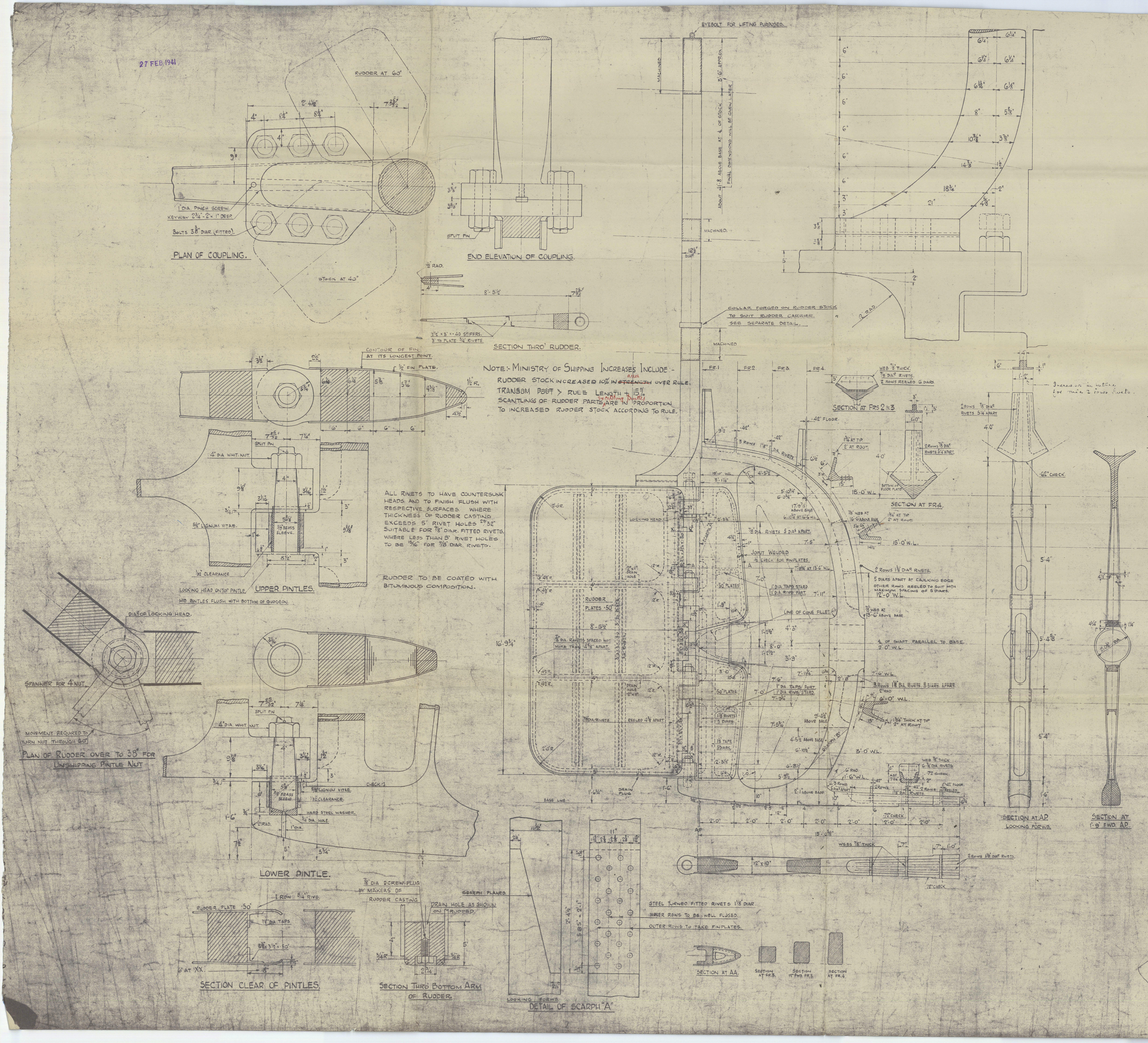
RUDDER STOCK OF FORGED INGOT STEEL TO BE MACHINED AS NECESSARY IN WAY OF QUADRANT ETC.

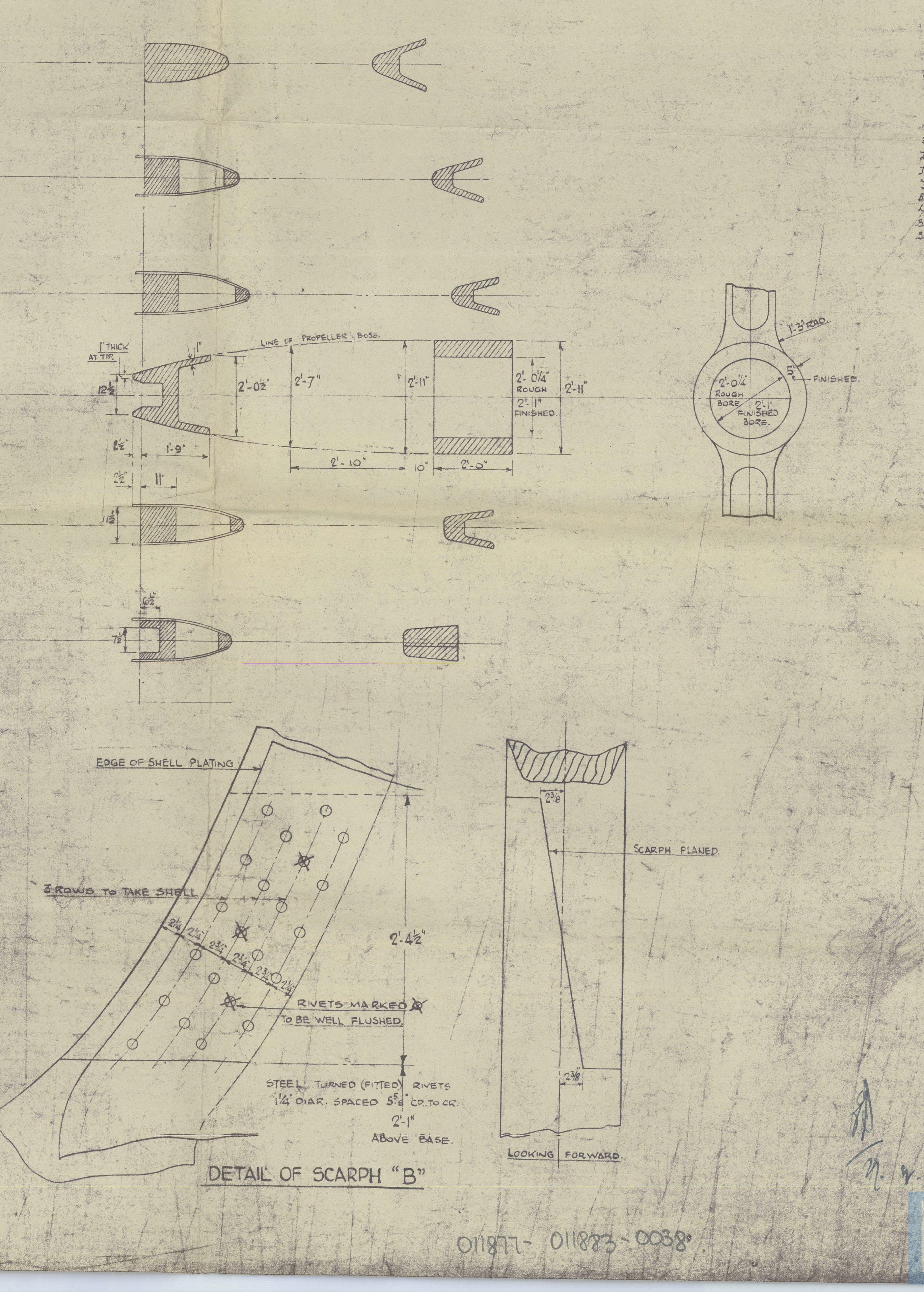
PINTLES, WITH NUTS, BRASS SLEEVES & SPLIT PINS WILL BE SUPPLIED BY RUDDER MAKERS.
LIGNUM VITAE BUSHES & HARD STEEL DISC WILL BE SUPPLIED BY STERNFRAME MAKERS.

NOTE:- MINISTRY OF SHIPPING INCREASES INCLUDE:-
RUDDER STOCK INCREASED 10% IN ~~STRENGTH~~ area OVER RULE.
TRANSOM POST > RULE LENGTH + 15%
SCANTLINGS OF RUDDER PARTS excepting pintles ARE IN PROPORTION TO INCREASED RUDDER STOCK ACCORDING TO RULE.

ALL RIVETS TO HAVE COUNTERSUNK HEADS AND TO FINISH FLUSH WITH RESPECTIVE SURFACES. WHERE THICKNESS OF RUDDER CASTING EXCEEDS 5" RIVET HOLES 29/32" SUITABLE FOR 7/8" DIAR. FITTED RIVETS. WHERE LESS THAN 5" RIVET HOLES TO BE 15/16" FOR 7/8" DIAR. RIVETS.

RUDDER TO BE COATED WITH BITUMINOUS COMPOSITION.


RUDDER AT 60°
STOCK AT 40°
1" DIA. PINCH SCREW.
KEYWAY 2 3/4"-2" x 1" DEEP.
BOLTS 3 3/8" DIAR. (FITTED).
PLAN OF COUPLING.
SPLIT PIN
END ELEVATION OF COUPLING.
3 1/2" x 3" x ·40 STIFFERS.
3" TO PLATE 3/4" RIVETS.
SECTION THRO' RUDDER.
CONTOUR OF FIN AT ITS LONGEST POINT.
1/2" FIN PLATE.
4" DIA WHIT. NUT.
5/8" LIGNUM VITAE.
3/8" BRASS SLEEVE.
1/32" CLEARANCE
LOCKING HEAD ON TOP PINTLE.
UPPER PINTLES.
MID PINTLES FLUSH WITH BOTTOM OF GUDGEON.
DIA. OF LOCKING HEAD.
SPANNER FOR 4" NUT.
MOVEMENT REQUIRED TO TURN NUT THROUGH 60°
PLAN OF RUDDER OVER TO 38° FOR UNSHIPPING PINTLE NUT
HARD STEEL WASHER.
3/4" DIA. HOLE.
LOWER PINTLE.
RUDDER PLATE ·50"
1 ROW 3/4" RIVS.
7/8" DIA. TAPS
6 AT XX.
SECTION CLEAR OF PINTLES.
7/8" DIA SCREW PLUG BY MAKERS OF RUDDER CASTING
DRAIN HOLE AS SHOWN ON RUDDER
SECTION THRO' BOTTOM ARM OF RUDDER.
SCARPH PLANED.
LOOKING FORWD.
DETAIL OF SCARPH "A"
STEEL TURNED FITTED RIVETS 1 1/8" DIAR.
INNER ROWS TO BE WELL FLUSED.
OUTER ROWS TO TAKE FINPLATES.
SECTION AT AA.
SECTION AT FR.3.
SECTION 12" FWD. FR.3.
SECTION AT FR.4.
EYEBOLT FOR LIFTING PURPOSES.
MACHINED
COLLAR FORGED ON RUDDER STOCK TO SUIT RUDDER CARRIER. SEE SEPARATE DETAIL.
LOCKING HEAD.
RUDDER PLATES ·50"
SCARPH "A"
DRAIN PLUG
BASE LINE
AP.
WEBS 7/8" THICK
2 ROWS 1 1/8" DIAR. RIVETS.
·72" CHECK.
SECTION AT FRS 2 & 3
SECTION AT FR.4.
16'-9 3/4"
15'-0 5/8"


SECTION AT AP. LOOKING FORWD.
SECTION AT 1'-9" FWD. AP.
EDGE OF SHELL PLATING
3 ROWS TO TAKE SHELL
RIVETS MARKED ⊗ TO BE WELL FLUSHED.
STEEL TURNED (FITTED) RIVETS 1 1/4" DIAR. SPACED 5 5/8" CR. TO CR.
2'-1" ABOVE BASE.
2'-4 1/2"
DETAIL OF SCARPH "B"
SCARPH PLANED.
LOOKING FORWARD.

Geo. Thomson

British Corporation (2) 26.1.40
Engine Works. (1) 30.1.40
Loft. (1) 26.1.40
Plater (1) 21.2.40
Fitter (1) 21.2.40
British Corporation (2) 27.2.40
Loft (1) 27.2.40
Beardmores (2) 14.2.40
Beardmores (2) 25.2.40

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